of the falls, there were no less than one hundred of these streams, and on sounding the required note the groupings of the drops and the positions of the ventral segments instantly altered in quite a marvellous manner. This case of acoustic sensitiveness is one of the most extensive I have ever noticed.

A second fall was found that would respond to certain notes, though it was not equal to the first in sensitiveness.

Though not able, from a sudden flooding of the streams, to discover the exact conditions for success, I believe the explanation of the phenomenon to be the same as that now generally given for sensitive smoke and water jets, viz: that the sound pulses produce a vibration of the orifice of the jet, by which the constitution of its issuing stream is altered. The orifice in the case is replaced by the thin moss filaments, which are surrounded by the stream instead of surrounding it. From their shape and position their filaments, acting as reeds, readily accept the motion of the sound waves and so alter the constitution of the vein."

Prof. Chase communicated observations on Daily Auroral and Meteoric Means, and on some new correlations of stellar and Planetary distances.

Mr. Lesley described a newly observed terminal moraine crossing the Walkill Valley at Ogdensburg near Franklin, Essex county, New Jersey.

Pending nominations, Nos. 697 to 701 and new nomination No. 702 were read.

The meeting was then adjourned.

DAILY AURORAL AND METEORIC MEANS.

By Pliny Earle Chase.

(*Read before the American Philosophical Society, Sept.* 20, 1872.)

The apparent influence of meteoric falls upon auroras, which is indicated by the five-day means, (*ante* p. 402), renders more minute observations desirable, in order to ascertain to what extent a similar influence may be traceable in the daily means.

The only available observations that have fallen under my notice, from which any satisfactory approximation can be made to the daily meteoric curve, are embodied in Baumhauer's table of the recurrences of meteoric stones and fire-balls, quoted by Lovering, ("on the Periodicity of the Aurora Borealis," p. 220). Lovering observes that the days signalized by the frequency of these phenomena are also days which, according to Quetelet, are distinguished by extraordinary numbers of shooting stars. I have grouped the second means of Baumhauer's numbers in five-day periods, and calculated the ratio of each ordinate to a mean ordinate of 100, in order to justify the following comparison with the auroral ordinates, which were similarly computed from Lovering's table.

FIVE-DAY AURORAL AND METEORIC NORMALS.

(A.=Auroral, *Lovering*. M.=Meteoric, *Baumhauer*.)

	A.	M.		A.	M.
January 3,	110	119	July 2,	40	35
" 8,	110	128	" 7,	46	51
" 13,	114	116	" 12,	44	83
" 18,	113	96	" 17,	40	113
" 23,	110	89	" 22,	39	121
" 28,	111	98	" 27,	45	121
Feb. 2,	113	111	August 1,	49	136
" 7,	116	115	" 6,	51	160
" 12,	125	105	" 11,	60	160
" 17,	133	91	" 16,	76	134
" 22,	134	90	" 21,	88	103
" 27,	132	97	" 26,	95	74
March 4,	129	103	" 31,	102	65
" 9,	133	106	Sept. 5,	112	86
" 14,	145	101	" 10,	123	110
" 19,	144	88	" 15,	131	106
" 24,	138	82	" 20,	138	88
" 29,	138	91	" 25,	142	86
April 3,	133	103	" 30,	139	99
" 8,	130	108	October 5,	133	108
" 13,	131	98	" 10,	129	108
" 18,	118	76	" 15,	129	108
" 23,	94	63	" 20,	133	111
" 28,	79	66	" 25,	132	105
May 3,	76	69	" 30,	126	95
" 8,	66	71	Nov. 4,	120	106
" 13,	61	86	" 9,	121	143
" 18,	57	100	" 14,	129	170
" 23,	51	96	" 19,	127	156
" 28,	47	88	" 24,	113	132
June 2,	44	85	" 29,	109	125
" 7,	44	82	Dec. 4,	115	125
" 12,	41	73	" 9,	122	125
" 17,	35	57	" 14,	127	123
" 22,	31	38	" 19,	125	111
" 27,	36	31	" 24,	114	99
			" 29,	111	103

In each curve there is a tendency to monthly maxima, the tendency being least evident in the summer months.

The principal minimum in each curve is in June.

There are nine marked maxima in each curve, of which those in the months of January, February, March, April, September, October and November, are the most nearly accordant. These maxima are as follows :

A. Jan. 13. Feb. 22. Mar. 16. Apr. 13. . . . . July 7. . . . . Sept. 25. Oct. 20. Nov. 14. Dec. 14.

M. Jan. 8. Feb. 7. Mar. 9. Apr. 8. May 18. . . . . Aug. 6. Sept. 10. Oct. 20. Nov. 14. . . . .

Two of the maxima are synchronous in the two curves ; three occur in the auroral ordinate which follows the meteoric ordinate ; two occur in the third subsequent ordinate, one of the two being midway between a precedent and subsequent meteoric ordinate. The accordances and the discrepancies may perhaps be explained by the hypothesis of lunar perturbations.

The daily curves present a similar accordance in the number of maxima and minima, but in consequence of the frequent uncertainty whether the auroral or the meteoric should be regarded as the precedent influence, they do not seem to furnish any additional data for satisfactory conclusions.

By variously grouping the auroral observations on each side of the days that have been designated by Wolfe and Kirkwood as rich in meteoric displays, or on each side of the middle days of meteoric periods, a variety of curves may be formed, of which the three following sets of ordinates furnish examples :

Days.	—7	—6	—5	—4	—3	—2	—1	0	+1	+2	+3	+4	+5	+6	+7
α	100	99	100	102	104	106	106	104	103	105	107	103	106	101	99
β	99	99	97	97	97	99	101	101	100	101	102	102	104	104	102
γ	103	102	101	98	97	98	98	99	101	101	101	103	105	101	98

These curves indicate a connection of meteoric displays with increasing auroral displays, together with a slight subordinate tendency to auroral maxima within one day of a meteoric display.

Although the æthereal disturbance, which is manifested by the auroras, appears to follow, more often than it precedes, meteoric falls, it seems probable that both phenomena are often dependent upon lunar perturbations or other extraneous causes. In such cases, the auroras may become visible before the meteors have reached the earth's atmosphere, and been made incandescent by friction.

STELLAR AND PLANETARY CORRELATIONS.

By Prof. Pliny Earle Chase.

(*Read before the American Philosophical Society, Sept.* 20, 1872.)

Mercury's mean distance may be grouped with the mean distances of other primary planets, so as to form the two following series :*

* In each table, C denotes the logarithm of the computed value; O, the logarithm of the observed value; E, the percentage of error in the computed value; L, the limit of retardation by solar rotation and of possible solar atmosphere; M, modulus of light. The fundamental unit is the suns's radius. The origin of the co-ordinates is taken at the intersection of the axis and the directrix.